

09/540,578

IN THE CLAIMS

1. (Previously Amended) Seed of maize inbred line designated PH3AV, representative seed of said line having been deposited under ATCC Accession No. PTA-4346.
2. (Original) A maize plant, or parts thereof, produced by growing the seed of claim 1.
3. (Cancelled)
4. (Currently Amended) A tissue culture of cells or protoplasts from the plant of claim 2.
5. (Previously Amended) A tissue culture according to claim 4, cells or protoplasts of the tissue culture being from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.
6. (Previously Amended) A maize plant regenerated from the tissue culture of claim 4, capable of expressing all the morphological and physiological characteristics of inbred line PH3AV, representative seed of which have been deposited under ATCC Accession No. PTA-4346.
7. (Original) A method for producing a first generation (F1) hybrid maize seed comprising crossing the plant of claim 2 with a different inbred parent maize plant and harvesting the resultant first generation (F1) hybrid maize seed.
8. (Previously Amended) The method of claim 7 wherein said different inbred parent maize plant is the female parent.

09/540,578

9. (Original) An F1 hybrid seed produced by crossing the inbred maize plant according to claim 2 with another, different maize plant.

10. (Original) An F1 hybrid plant, or parts thereof, grown from the seed of claim 9.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Original) A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material, comprising: obtaining the maize plant, or its parts, of claim 2 as a source of said breeding material.

16. (Previously Amended) The method of claim 15 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

09/540,578

20. (Cancelled)

21. (Previously Amended) A maize plant, or parts thereof, having all the physiological and morphological characteristics of inbred line PH3AV, representative seed of said line having been deposited under ATCC accession No PTA-4346.

22. (Cancelled)

23. (Currently Amended) A tissue culture of cells or protoplasts from the plant of claim 21.

24. (Previously Amended) A tissue culture according to claim 23, cells or protoplasts of the tissue culture being from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

25. (Previously Amended) A maize plant regenerated from the tissue culture of claim 23, capable of expressing all the morphological and physiological characteristics of inbred line PH3AV, representative seed of which have been deposited under ATCC Accession No. PTA-4346.

26. (Original) A method for producing a first generation (F1) hybrid maize seed comprising crossing the plant of claim 21 with a different inbred parent maize plant and harvesting the resultant first generation (F1) hybrid maize seed.

27. (Previously Amended) The method of claim 26 wherein said different inbred parent maize plant is the female parent.

28. (Cancelled)

09/540,578

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Previously Amended) A process for producing inbred PH3AV, representative seed of which have been deposited under ATCC Accession No. PTA-4346, comprising:

- (a) planting a collection of seed comprising seed of a hybrid, one of whose parents is inbred PH3AV said collection also comprising seed of said inbred;
- (b) growing plants from said collection of seed;
- (c) identifying inbred parent plants;
- (d) selecting said inbred parent plant;
- (e) controlling pollination through selfing, which preserves the homozygosity of said inbred parent plant; and
- (f) collecting morphological and/or physiological data so that said inbred parent may be identified as inbred PH3AV.

09/540,578

38. (Original) The process of claim 37 wherein step (c) comprises identifying plants with decreased vigor.

39. (Original) The process of claim 37 wherein step (c) comprises identifying seeds or plants with homozygous genotype.

40. (Currently Amended) A method for producing a first generation F1 PH3AV-derived maize plant, comprising:

- (a) crossing inbred maize line PH3AV, representative seed of said line having been deposited under ATCC Accession No. PTA-4346, with a second maize plant to yield progeny maize seed;
- (b) growing said progeny maize seed, under plant growth conditions, to yield said first generation F1 PH3AV-derived maize plant.

41. (Currently Amended) A first generation F1 PH3AV-derived maize plant, or parts thereof, produced by the method of claim 40.

42. (Currently Amended) The method of claim 40, further comprising:

- (c) [crossing] selfing or sibbing said first generation F1 PH3AV-derived maize plant [with itself plant] to yield additional PH3AV-derived progeny maize seed;
- (d) growing said progeny maize seed of step (c) under plant growth conditions, to yield additional PH3AV-derived maize plants;
- (e) [repeating the crossing and growing steps of (c) and (d)] repeatedly selfing said additional PH3AV-derived maize plants for successive filial generations to generate a further PH3AV-derived maize plant[s].

43. (Currently Amended) The further PH3AV-derived maize plant[s], or parts thereof, produced by the method of claim 42 wherein said further PH3AV-

09/540,578

derived maize plant has at least 50% genetic contribution from inbred maize line PH3AV

44. (Cancelled)

45. (Previously Cancelled)

46. (Previously Cancelled)

47. (Cancelled)

48. (Cancelled)

49. (Cancelled)

50. (New) A method of developing a backcross conversion PH3AV maize plant wherein an inbred maize plant PH3AV is crossed to a second maize plant, wherein a trait is backcrossed into said inbred maize plant PH3AV, and wherein said inbred maize plant PH3AV is a recurrent parent.

51. (New) The backcross conversion PH3AV maize plant of claim 50 wherein the trait backcrossed into said inbred maize plant PH3AV confers a trait from a group consisting of herbicide resistance, insect resistance, disease resistance, male sterility, and waxy starch; and wherein inbred maize plant PH3AV has been used as a recurrent parent at least two times.

52. (New) A method of developing a first generation hybrid maize plant comprising crossing the backcross conversion PH3AV maize plant of claim 51 with a second maize plant.

09/540,578

53. (New) The first generation hybrid maize plant developed by the method of claim 52.

54. (New) A method of developing a transgenic PH3AV maize plant wherein inbred maize plant PH3AV is transformed with a transgene

55. (New) The transgenic PH3AV maize plant of claim 54 wherein said transgene confers a trait from the group consisting of insect resistance, herbicide resistance, disease resistance, and male sterility.

56. (New) A method of developing a first generation hybrid plant comprising crossing the transgenic PH3AV maize plant of claim 55 to a second maize plant.

57. (New) The first generation hybrid plant produced by the method of claim 56.